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ABSTRACT

The Occupational Safety and Health Administration Training Institute's series of courses for 1978 is presented in this catalog. Most courses are designed for occupational safety or health professionals who are federal or state employees; two are available for personnel from the private sector. The schedule includes courses required for newly hired safety engineers, safety specialists, and industrial hygienists, as well as revised, advanced technical courses for experienced compliance safety and health officers (CSHOs). Course content is based on The Occupational Health and Safety Act, pertinent standards, and operational procedures incorporated into the safety and health field operation manuals. Each course listing includes a description of what is covered in the course, length of course, objectives, course highlights, and the course's sequence in the compliance training program. The following are some of the thirty-four course titles: hazardous materials, welding, compressed gases, and fire protection; initial compliance course for industrial hygienists; safety hazard recognition; principles of industrial ventilation; recognition, evaluation, and control of noise; civil law enforcement for CSHOs; basic industrial hygiene; respirator training; basic science as applied to occupational safety and health; and accident investigation. The catalog includes a floor plan of the institute, general course information, and application procedures. Appended are lists of self-instruction courses, area office seminars, on-the-job training segments, descriptions of the institute staff, a subject index to the courses, and a directional map of the institute and surrounding area. (CT)

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OSHA Training Institute Catalog of Courses

U.S. Department of Labor
Ray Marshall, Secretary

Occupational Safety and Health Administration
Eula Bingham, Assistant Secretary

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CE 018 370

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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OSHA's Office of Training and Education is charged with fulfilling the agency's obligation under the Occupational Safety and Health Act of 1970 to provide job safety and health training and education to employers and employees. But the responsibility doesn't stop there. The Office also must train compliance personnel and for this reason OSHA's Training Institute was established. At the Institute, in addition to the training of Federal and State compliance personnel, employers and employees and their representatives, educators, and others are given the opportunity to improve their ability to recognize, control, and prevent unsafe and unhealthful working conditions.

As an educator myself, I appreciate the value of training and education. The OSHA Training Institute can be the key to a more professional and skilled compliance force, and ultimately the working men and women of the country will benefit through improved efforts to reduce and eliminate hazards in the American workplace.

Eula Bingham

Eula Bingham, Assistant Secretary
Occupational Safety and Health Administration

Directorate of Training, Education, Consultation, and
Federal Agency Safety and Health Programs
Clinton Wright, Director

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Earl D. Heath, Director

OSHA Training Institute
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This catalog was compiled and edited by
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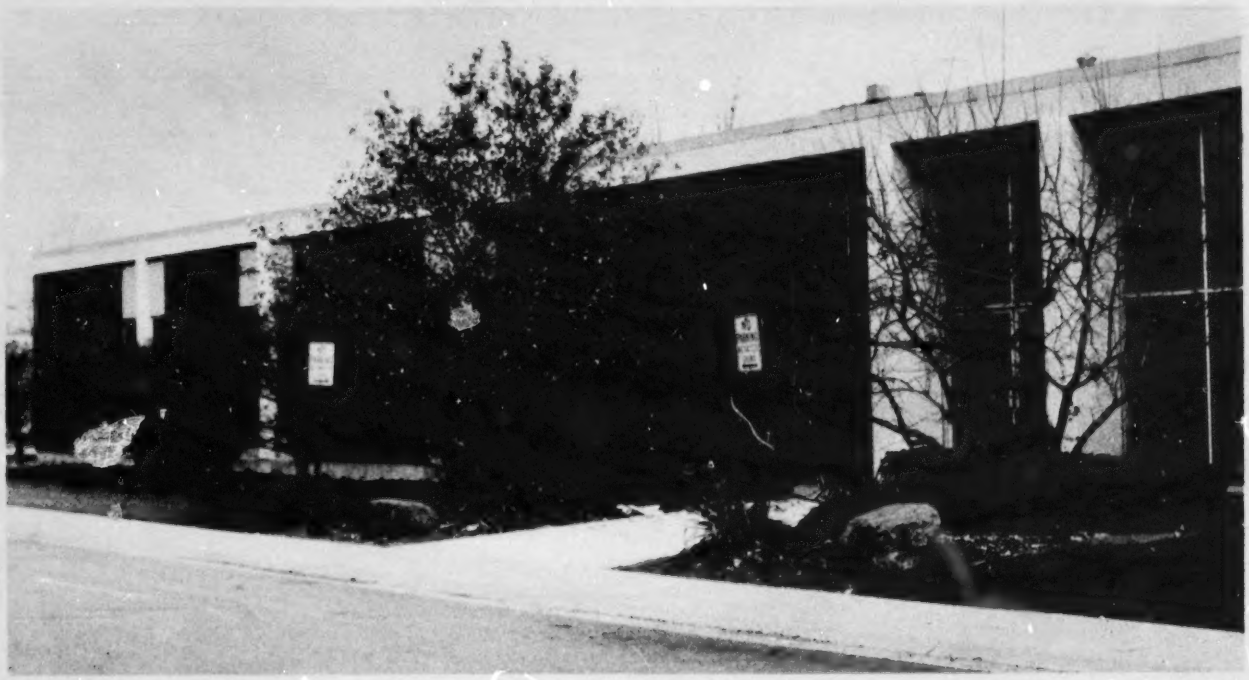

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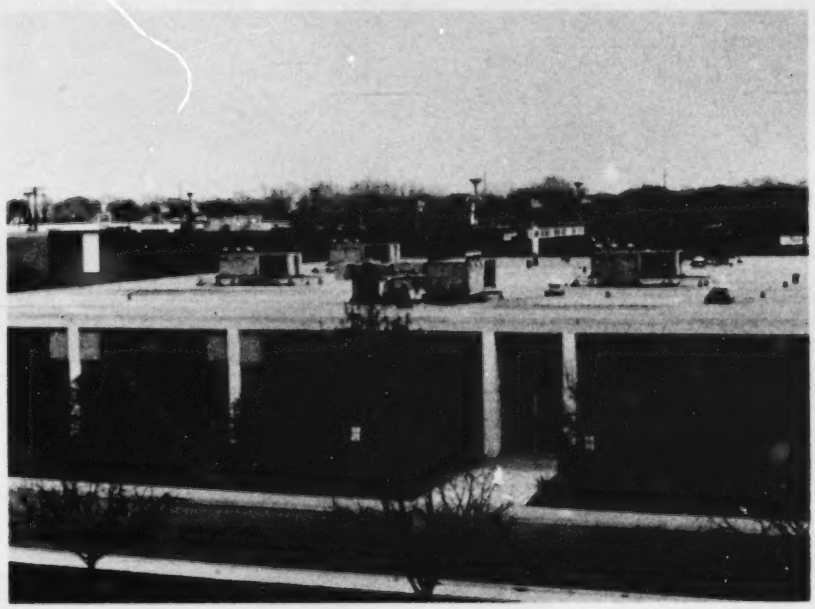


Welcome to the OSHA Institute!

When the Division of Training opened its Training Institute, January 17, 1972, we had a fairly modest objective, to teach and motivate people in the manifold aspects of occupational safety and health. By January 1976, the 10,000th course graduate was processed through the Institute. But during these years, the need for additional education and training services increased due to the development of new course materials and the increased demand for trained safety and health professionals. Because demands for these services created the need for additional space, we moved in the Fall of 1977 from our Rosemont (near Chicago) training site into our facilities at nearby Des Plaines. It is expected that these new facilities will allow our staff greater flexibility to create simulated workplace environments, to make better use of audiovisual materials and to communicate the academic content of the courses to a greater degree in our expanded safety and industrial hygiene laboratories.

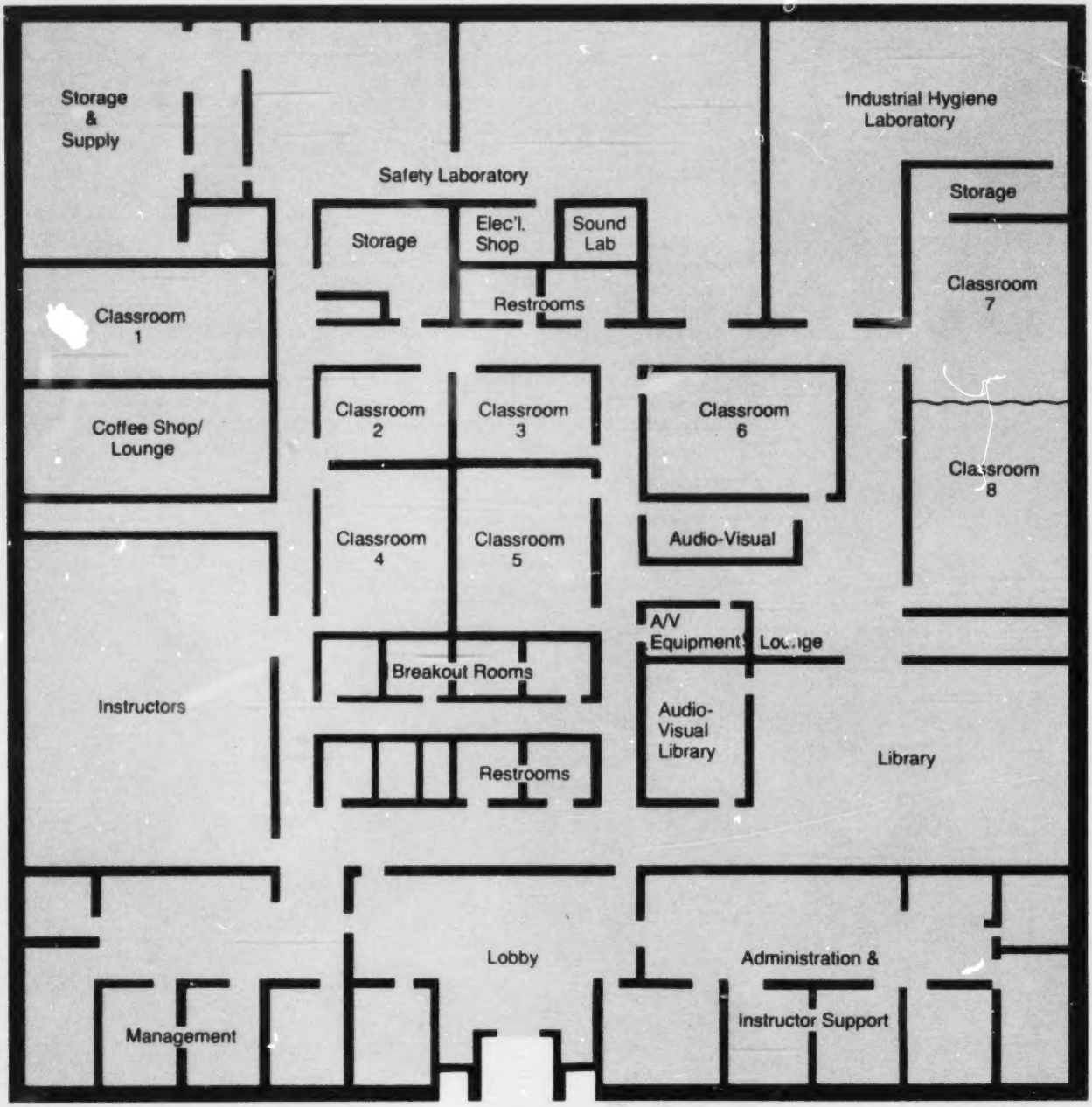
The OSHA Training Institute is **your** training facility. Our primary goal is to provide you with an excellent opportunity to improve and expand your skills as a safety or health professional. To that end we are presenting an expanded series of courses, most of which are part of a three-**phase** training plan designed to enable OSHA's Compliance Safety and Health Officers to learn how to deal with actual workplace situations. Many of the courses are also open to those not involved in compliance activities.

We believe that the services provided here at the Training Institute will enable you to begin fulfilling **your** career objectives as well as to supply you with many of the necessary tools to do the job of protecting the health and safety of a primary resource in this country—the American worker.

Lee Saltsgaver

H. Lee Saltsgaver, Manager
OSHA Training Institute

OSHA Training Institute Floor Plan



Course Information

The majority of courses offered at the Institute are part of three-phase development programs designed to build a more effective work force and, at the same time, to aid in the professional development of OSHA and State compliance personnel. The schedule contains courses required for newly hired Safety Engineers, Safety Specialists, and Industrial Hygienists, as well as revised, advanced technical courses for experienced compliance officers. Selection of courses is the responsibility of the employee's supervisor. In this connection, the supervisor should review the on-the-job training verifications required by the Assistant Secretary's Memorandum of January 3, 1977.

Course content is based on the Act, pertinent standards, and operational procedures incorporated into the safety and health field operations manuals. Related OSHA policies are discussed. Use of monitoring instruments, sampling methods, and legal procedures (in preparing court cases involving citation for noncompliance) are all examples of techniques and procedures delineated in the FOM (Safety Field Operations Manual) and the IHFOM (Industrial Hygiene Field Operations Manual). Technical instruction is also provided to explain the purpose of the more complex regulations.

Expanded facilities at OSHA's Training Institute allow instructors to make full use of new audiovisual aids and laboratory equipment which permit the simulation of workplace situations. The emphasis is on creating for the student as much visual introduction and hands-on experience as possible prior to encountering actual workplace conditions.

Included with the detailed description of courses taught at the Institute is a list of self-instruction courses, area office seminars, and on-the-job training (OJT) segments for Safety Engineers/Specialists and Industrial Hygienists.

The first phase of the three-phase training program is mandatory for compliance officers/trainers with the exception of one course in each specialization:

1. Safety—"Basic Science as Applied to Occupational Safety and Health"
2. Industrial Hygiene—"Basic Industrial Hygiene Course"

The second and third-phase training plans are not as absolute as the first, offering different sequences depending on consultations with the supervisor and/or designated trainers. Waivers are based, then, on consultations between various parties as to whether the trainee has enough competency to waive the course. Personnel involved would be ARA/TECFAP, the Regional Training Officer (RTO), the Area Director and the supervisor. The Institute is consulted only on borderline cases.

Also, it is the responsibility of the Institute in conjunction with the trainee's Area Director and the ARA/TECFAP or the RTO to decide whether other courses meeting basic training requirements and objectives can be substituted for Institute courses.

Class Hours

Registration for all courses is scheduled at 8:00 A.M. on the starting date.

Daily training periods are scheduled to begin at 8:15 A.M. and end at 4:45 P.M.

Course Application Procedures

As in previous fiscal years, training opportunities are provided not only for U.S. DOL/OSHA employees, but also for State and other Federal agency personnel as well as for employer and employee representatives. But because of heavy demand for the courses, training priorities had to be established to ensure that those Federal and State employees who have compliance responsibilities receive the benefit of courses—primarily designed for them—at the earliest opportunity.

There are several application procedures, depending on the applicant:

U.S. DOL/OSHA Employees
Regional Administrators shall nominate DOL personnel directly to the Registrar, OSHA Training Institute, on OSHA Form 43 (OSHA Training Institute Form). The Institute will confirm nominations and send the nominee instructions about attendance. Inquiries from the field to the Institute regarding this training shall be sent through the appropriate Regional Administrator. To expedite the registration process, the Institute Manager may communicate directly with Regional Administrators or their designated representatives.

State Personnel
Among potential State trainees, priority will be assigned to employees of States with 7(c)(1) enforcement agreements. Next in priority will be personnel nominated by 18(b) State officials for training or personnel from States with 7(c)(1) consultation agreements. Applicants from other States will be accepted only after the requirements of these groups have been met. On a space-available basis, State personnel will be accommodated in all courses at the OSHA Training Institute. Scheduling will be accomplished through the office of the OSHA Regional Administrator. Other governmental (city and county) employees will be accepted on an individual need basis providing space is available.

Employers, Employees, and Their Representatives
Two courses are available at the Institute for personnel from the private sector: the "Instructor Course in Occupational Safety and Health Standards for the Construction Industry" (400-2), and "A Guide to Voluntary Compliance for Instructors" (500-2). The manager, OSHA Training Institute, will allocate spaces for these courses in accordance with priorities established by OSHA's National Office.

Federal Department and Agency (other than OSHA) Personnel
During Fiscal Year 1979, Federal department and agency personnel will be allocated a minimum of 15 percent of the spaces in compliance courses conducted at the OSHA Training Institute.

Two courses have been designed and are presented specifically for personnel from other Federal agencies. One is the "Occupational Safety and Health Course for Other Federal Agencies" (two weeks). The other is the one-week "Collateral Duty Course" for part-time safety and health personnel.

Plan Ahead

Reservations
You are required to make your own motel and airline reservations. To get government discount rates, inform the motel that you will be attending the OSHA Training Institute.

All motels offer courtesy transportation to and from the airport. To obtain this service on arrival, use the phone provided in the baggage claim area.

These are nearby motels:

Chelsea Motor Inn 1275 Lee Street, Des Plaines	312/298-1700
4-Horseman Motel 10300 W. Higgins Road, Rosemont	312/296-4471
Grand Plaza Hotel 6465 N. Mannheim Road, Rosemont	312/297-2100
O'Hare American Motel 2175 Touhy, Des Plaines	312/297-4400
Ramada O'Hare Inn 6600 N. Mannheim Road, Des Plaines	312/827-5131
TOLL-FREE	800/323-1065
Royal Court Inn 1750 South Elmhurst Road, Des Plaines	312/956-1700
Sheraton O'Hare 6810 N. Mannheim Road, Rosemont	312/297-1234
Travel Lodge O'Hare 3003 N. Mannheim Road, Des Plaines	312/296-5541
Windsor Inn 6565 N. Mannheim Road, Rosemont	312/827-6121

The Chelsea, O'Hare American and Royal Court provide transportation to and from the Institute. All others listed may or may not depending on circumstances. Students staying at any other than those noted are responsible for making their own transportation arrangements.

Airlines which service O'Hare include:

Air Wisconsin	Delta	Pan American
Allegheny	Eastern	Piedmont
American	North Central	Southern
Braniff	Northwest Orient	TWA
Continental	Ozark	United

Check Cashing and Credit Cards

Do not expect to readily cash government or personal checks at area banks. Should the need arise, Institute staff can direct you to check-cashing facilities. You are also advised to carry at least one major credit card. An example of where credit cards are a must: If you expect to attend the Institute for more than a week, you may want to rent a car to travel to areas of interest in and around Chicago. Renting a car at one of several agencies close to the Institute requires a substantial deposit unless a credit card is used.

Mail

If you elect to have your mail sent to the Training Institute during your stay, please arrange to have the number of the course you are attending placed on the lower left-hand portion of the envelope. All mail should have a return address. When mail is received for students, a note is posted on the bulletin board in the coffee shop area.

Suggested Dress

Casual business dress is appropriate.

Parking

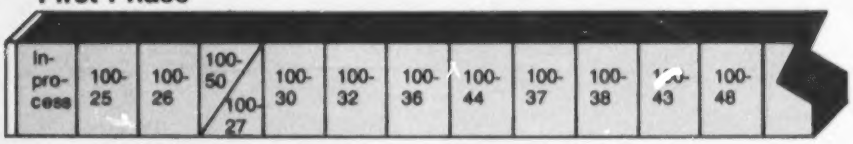
The Institute and motels in the area offer sufficient parking space at no cost.

Additional Information

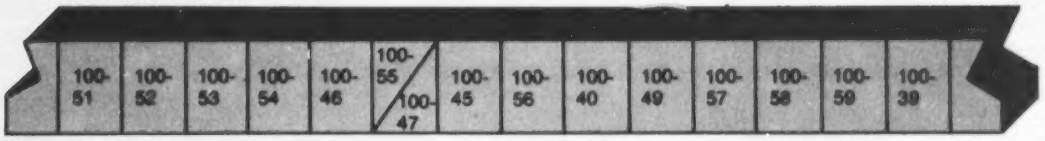
Additional information you may want in planning a prolonged stay at the Institute can be found in the "Student Guide" published by OSHA or requested by calling the Institute at 312/297-4810 (commercial) or 8-353-2500 (FTS).

Training Plan for OSHA Industrial Hygienists

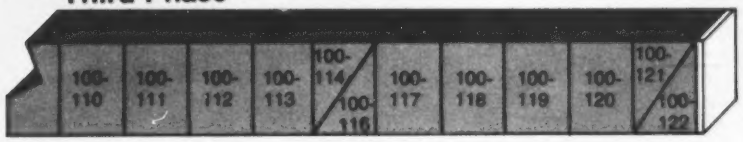
First Phase



Second Phase

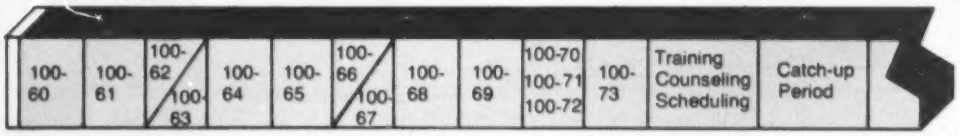


Third Phase

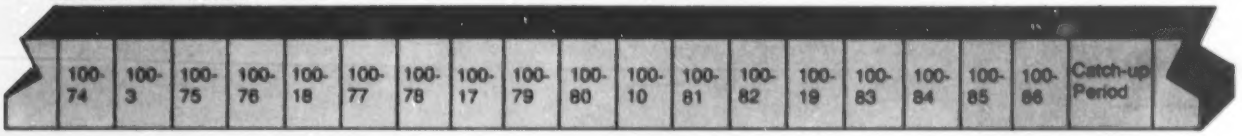


Training Plan for OSHA Safety Engineers/Specialists

First Phase



Second Phase



Third Phase

100-3 Construction Standards for CSHO's

(2 weeks)

This course covers all subparts of 29 CFR 1926, including the inherent hazards to be found in each. The subparts are: General Application and Interpretations; General Safety & Health Provisions; Health & Environmental Controls; Personal Protective Equipment; Fire Protection; Signs, Signals and Barricades; Materials Handling; Tools; Welding and Cutting; Electrical; Ladders and Scaffolding; Floors and Wall Openings and Stairways; Cranes and Hoists; Mechanized Equipment; Trenching and Excavations; Concrete Work; Steel Erection; Tunnels and Shafts; Demolitions; Use of Explosives; Power Transmission and Distribution; and Rollover Protective Structures. Also covered is the interface between the Construction Safety Act and the Occupational Safety and Health Act.

Objectives:

The trainee will be able to:

- identify various types of construction processes, materials, equipment and machinery;
- distinguish between safe and unsafe use of construction equipment, machinery and work practices;
- recognize direct or indirect hazards inherent in various construction operations;
- reference proper regulation for citation purposes;
- recognize correct methods or procedures used for abatement of violation.

Course Highlights Include:

- basic engineering principles and types of construction;
- hazard violation workshop;
- hands-on training in inspection and use of construction tools and equipment.

Course Sequence in the Compliance Training Program:

This is the first course in the second phase of the training plan for Safety Engineers/Specialists.

100-4 Advanced Maritime Course for CSHO's

(4 days)

Prerequisite for this course is Course 100-24 followed by six to nine months in the field accompanying a Senior Maritime Compliance Officer. Advanced course expands the basic materials through more advanced theories, problems, and procedures.

Objectives:

The trainee will be able to:

- recognize and evaluate hazards associated with complex maritime operations including sling failure modes, stress diagrams, gear failure, sling load determinations, control of gas hazards on vessels and gas-freeing methods.

Course Highlights Include:

- workshops for discussing field experiences and associated problems;
- maritime accident investigation problem solving;
- stress calculations.

100-10 Hazardous Materials, Welding, Compressed Gases, and Fire Protection

(2 weeks)

This course familiarizes the trainee with fire theory and with the hazards of: working with compressed gases; industrial welding operations; handling and storing hazardous materials including chemicals; and flammable and combustible liquids. Subparts H, L, M, and Q of 1910 are covered.

Objectives:

The trainee will be able to:

- recognize hazards associated with various industrial materials and operations such as spray finishing, dip tanks, storage, handling and use of flammable and combustible liquids, explosives and compressed gases;
- apply safety standards to various welding operations and identify safety hazards associated with each;
- evaluate which fire protection system is appropriate for controlling and extinguishing fires.

Course Highlights Include:

- descriptions of various spray finishing and dip tank operations and associated safety hazards;
- recognition of hazards and unsafe work practices involved in the use of flammable and combustible liquids.

Course Sequence in the Compliance Training Program:

This is the fourth course in the second phase of the training plan for Safety Engineers/Specialists.

100-17 Electrical Standards for CSHO's

(2 weeks)

This course familiarizes the trainee with the hazards inherent in electrical installations and equipment and covers: Subpart S and adoption by reference of National Electrical Code; basic electrical fundamentals; grounding requirements; over-current protection; fixed and portable equipment requirements; electrical systems and circuitry; and wiring methods. Training is provided in inspection and testing procedures.

Objectives:

The trainee will be able to:

- identify the types of electrical systems and equipment which are installed and maintained according to the National Electrical Code;
- recognize and evaluate hazards to workers from non-compliance electrical installations and equipment;
- reference proper National Electrical Code requirements for citation purposes;
- recognize correct methods or procedures used for abatement of violations.

Course Highlights Include:

- theories, principles and applications of electricity;
- effects of electric current on the body;
- interpretation and clarification of National Electrical Code as it is applied under Subpart S, 29 CFR 1910;
- demonstration of instrumentation used to detect hazards inherent in electrical circuits and grounding systems.

Course Sequence in the Compliance Training Program:

This is the third course in the second phase of the training plan for Safety Engineers/Specialists.

100-18 Machinery and Machine Guarding Standards for CSHO's

(1 week)

This course familiarizes the student with various types of machinery and machine safeguards to develop an understanding of machine inspection procedures, and to enable the CSHO to recognize hazards associated with point of operation, rotating parts, flying chips and sparks, etc. It covers Subpart O of 1910 standards.

Objectives:

The trainee will be able to:

- identify various types of machinery;
- identify various types of guards, devices and controls;
- identify various power transmission apparatus;
- recognize hazards created by point of operation, rotation, reciprocating and transverse motions, and in-running nip points;
- identify inadequate safeguarding, improper procedures, inadequate maintenance, improper training and unsafe working conditions;
- determine procedures necessary to abate machinery hazards.

Course Highlights Include:

- explanations of various machinery hazards including those associated with metal working, woodworking, abrasive wheels, mills and calenders, mechanical power presses and forging machines;
- various types of guards, devices and controls to protect the operator and others;
- "hands-on" training on available machines.

Course Sequence in the Compliance Training Program:

This is the second course in the second phase of the training plan for Safety Engineers/Specialists.

100-19 Cranes and Materials Handling and Storage for CSHO's

(1 week)

This course familiarizes the trainee with hazards of handling and storing materials in all types of workplaces, and covers standards relating to aisles and passageways, and handling equipment. Subparts F and N of 1910 are covered in this course.

Objectives:

The trainee will be able to:

- identify various types of materials handling equipment, including cranes, derricks and powered industrial trucks, and hazards associated with improper design, use and maintenance;
- recognize hazards associated with the storage and handling of materials in all types of workplaces;
- understand crane use and mobile crane stability;
- identify hazards associated with powered platforms, manlifts and vehicle-mounted work platforms.

Course Highlights Include:

- up-to-date review of various methods of material storage;
- thorough presentation of various types of materials handling equipment;
- wire rope construction and inspection procedures;
- sling construction and use, including theory of stress calculations;
- coverage of applicable consensus standards.

Course Sequence in the Compliance Training Program:

This is the fifth course in the second phase of the training plan for Safety Engineers/Specialists.

100-24 Basic Maritime Course for CSHO's

(9 days)

This course covers the legal foundations and interpretations of maritime jurisdiction and application, including functions of the U.S. Coast Guard. Longshoring industry study covers vessel and equipment nomenclature, and how equipment is used. Shipyard study covers vessel repair, construction, workplace environment, and the work of the Shipyard Competent Person. Maritime standards are given extensive coverage.

Objectives:

The trainee will be able to:

- identify specific types of maritime operations, materials, equipment, and machinery and recognize potential hazards associated with them;
- identify improper work practice procedures, inadequate maintenance procedures;
- evaluate hazards to workers resulting from noncompliance.

Course Highlights Include:

- aspects of ship repairing, shipbuilding, shipbreaking and longshoring operations;
- use of ship's cargo handling gear and shore based gear used to handle cargo;
- Competent Person and Marine Chemist requirements including "hazardous spaces" entry and atmospheric testing.

100-27 Initial Compliance Course for Industrial Hygienists

(3 weeks)

This course ensures that the trainee has a basic knowledge of the Occupational Safety and Health Act and its implications for the Industrial Hygienist. It will enable the trainee to assist the Area Office effectively in its industrial hygiene inspection activities. It covers: content and development of Occupational Safety and Health Act and health standards, inspection policies, procedures, and forms; introductory concepts of health hazards recognition; and basic instrument calibration. Course uses the Federal Register, Field Operations Manual, and Industrial Hygiene Field Operations Manual as resource documents.

Objectives:

The trainee will be able to:

- describe all the sections of the Occupational Safety and Health Act, PL 91-596;
- describe accurately all the applicable policies and procedures in order to perform a proper industrial hygiene inspection;
- properly fill out all the applicable Occupational Safety and Health forms relevant to the job;
- accurately describe and apply the proper Occupational Safety and Health Standards;
- calibrate and operate the basic industrial hygiene instruments according to the Industrial Hygiene Field Operations Manual;
- recognize potential health hazards in selected situations.

Course Highlights Include:

- laboratory in calibration and operation of basic industrial hygiene instruments;
- workshop in interpretation and application of OSHA standards;
- review and analysis of OSHA inspection techniques and procedures.

Course Sequence in the Compliance Training Program:

This is the second course in the first phase of the training plan for Industrial Hygienists.

100-32

Advanced Compliance Course for Industrial Hygienists

(2 weeks)

Course covers field policies for OSHA enforcement activities as contained in the IHFOM, Program Directives, and Field Information Memoranda. Topics include direct-reading instruments, coke oven standards, carcinogens and related standards, introduction to ionizing and nonionizing radiation and related standards, advanced noise instrumentation, work practice standards, compliance determination, and legal aspects.

Objectives:

The trainee will be able to:

- calibrate and operate hand-held noise and radiation direct-reading instruments;
- identify sources of contamination of the work environment such as solvent vapors and welding fumes;
- determine compliance procedures for applying OSHA standards for physical and carcinogenic health hazards;
- apply OSHA policies in conducting industrial hygiene inspections.

Course Highlights Include:

- review of agency policy and legal aspects of compliance procedures.

Course Sequence in the Compliance Training Program:

This is the third course in the first phase of the training plan for Industrial Hygienists.

100-37 Safety Hazard Recognition

(2 weeks)

Course covers recognition of principal hazards as well as standards, sources of information, and procedures for recognizing safety hazards and, when necessary, referring items to the Safety Compliance Officers for action. This course includes orientation to maritime, construction and general industry standards.

Objectives:

The trainee will be able to:

- identify commonly occurring safety hazards in general industry, maritime and construction workplaces;
- select and cite appropriate safety standards pertaining to safety hazards;
- identify sources of information on the causes and control of safety hazards such as the National Electrical Code, National Fire Code and National Safety Council;
- identify situations which could cause imminent danger conditions, and recognize the appropriate response.

Course Highlights Include:

- review of work practices, industrial equipment and processes that can present safety hazards for workers;
- review of 29 CFR 1926, 1910 and portions of maritime standards;
- review of videotaped industrial operations;
- conduct an actual safety inspection of a Federal agency worksite.

Course Sequence in the Compliance Training Program:

This is the fourth course in the first phase of the training plan for Industrial Hygienists.

100-39 Principles of Industrial Ventilation

(1 week)

Course teaches principles of industrial ventilation as a means of controlling potentially hazardous air contaminants. It includes the physics of air, classification of ventilation systems, terminology, fundamentals of air flow, make-up air, air movers, air cleaners, system design, system balancing, air flow system surveys, and a design problem session.

Objectives:

The trainee will be able to:

- describe the physics and dynamics of air flow;
- describe various types of air movers, air cleaners, and other ventilation equipment;
- distinguish between the types of industrial ventilation systems and describe the limitations of each system in controlling air contaminants;
- conduct a ventilation survey for proper system design and adequate air flow volume;
- operate and properly record results for air flow testing equipment such as manometers, flow meters and velometers;
- design a ventilation system using the equivalent-foot method.

Course Highlights Include:

- problem solving in the control and capture of air contaminants;
- actual air flow measurements of a system designed during the one-week course.

Course Sequence in the Compliance Training Program:

This is the sixth course in the second phase of the training plan for Industrial Hygienists.

100-40 Recognition, Evaluation and Control of Noise

(2 weeks)

Course covers noise terminology, principles of noise evaluation, equipment, standards, principles of noise control and feasibility of abatement. Laboratory exercise involves the use of a sound level meter, dosimeter, impact meter, octave band analyzer and audiometer.

Objectives:

The trainee will be able to:

- apply the physics of sound in evaluating and controlling noise;
- calibrate and operate noise instruments including a sound level meter, a noise dosimeter, an octave band analyzer and an impact meter;
- identify and evaluate sources of noise such as vibrating surfaces and turbulent air flow;
- recognize what engineering control measures are appropriate for reducing excessive noise at the worksite;
- perform audiometric testing to determine any hearing loss.

Course Highlights Include:

- recognition and evaluation of noise sources at the worksite;
- laboratory experience in the performance of audiometer testing equipment.

Course Sequence in the Compliance Training Program:

This is the fourth course in the second phase of the training plan for Industrial Hygienists.

100-47 Civil Law Enforcement Course

(1 week)

Courtroom procedures, expectations of solicitors, necessary documentation and case preparation are covered, as well as a review of selected case files showing correct and incorrect applications of applicable standards.

Objectives:

The trainee will be able to:

- properly prepare a case file;
- prepare the necessary documentation for contested citations;
- recognize and meet solicitor's requirements in preparing for contested cases;
- determine what is proper conduct at a hearing.

Course Highlights Include:

- experience in pre-trial preparation of evidence and documents for courtroom presentation;
- review of case files;
- review of recent pertinent court decisions.

Course Sequence in the Compliance Training Program:

This is the third course in the second phase of the training plan for Industrial Hygienists.

100-50 Basic Industrial Hygiene Course

(1 week, optional)

This course introduces the disciplines and issues pertinent to the field activities of the OSHA Industrial Hygienist. Included are an introduction to epidemiology, toxicology, selected topics in anatomy and physiology, dose response relationships, and concepts of evaluating and controlling health hazards in the work environment.

Objectives:

The trainee will be able to:

- identify classifications and biological effects of toxic materials;
- apply a basic knowledge of the concepts of anatomy and physiology in determining major routes of entry from exposure to specific health hazards;
- recognize advantages of various epidemiological approaches for determining disease etiology in specific industrial situations;
- describe the relationships between exposure time, contaminant concentration, severity of effect, and routes of entry;
- describe principal detoxification mechanisms in the body, detoxification routes, and normal and abnormal responses to toxic chemicals.

Course Highlights Include:

- an overview of industrial toxicology and epidemiological methods applicable to industry;
- basic concepts of occupational disease causes and prevention.

Course Sequence in the Compliance Training Program:

This is the first (optional) course in the first phase of the training plan for Industrial Hygienists.

100-53 Advanced Industrial Hygiene Course

(1 week)

Epidemiology, toxicology, biostatistics, and carcinogenesis are among the topics in this study of the occurrence and control of human illnesses. Course includes review of materials developed as prologues to OSHA standards for asbestos, vinyl chloride, coke oven emissions, and benzene, and proposed OSHA standards for lead, mercury, silica, and carbon monoxide.

Objectives:

The trainee will be able to:

- describe the development and application of specific OSHA health standards (asbestos, coke oven, noise) to the worksite;
- relate principles of epidemiology, toxicology, biostatistics and carcinogenesis to the occurrence of illness in the work force.

Course Highlights Include:

- techniques and methods for studying how toxic substances can contribute to the occurrence of occupational illness.

Course Sequence in the Compliance Training Program:

This is the first course in the second phase of the training plan for Industrial Hygienists.

100-55 Communications and Human Relations for Industrial Hygienists

(1 week)

Course covers knowledge and methods of creating and maintaining effective communication and working relationships with colleagues, employers, and employees.

Objectives:

The trainee will be able to:

- identify his or her own strengths and weaknesses in dealing with people;
- recognize human factors which may determine the quality of communicating and relating to others;
- apply information and methods learned to create and maintain effective communication and relations with the people encountered.

Course Highlights Include:

- training in how interpersonal relationships affect OSHA inspections.

Course Sequence in the Compliance Training Program:

This is the second course in the second phase of the training plan for Industrial Hygienists.

100-57 Respirator Training Course

(1 week)

Lectures cover the manufacture, testing, certification, selection, fitting, use and maintenance of respirators. Course includes laboratory exercises.

Objectives:

The trainee will be able to:

- describe the basic elements of design, manufacture, testing and certification of respirators;
- select and use the proper respirator for different types of air contaminants;
- recognize when respirators can appropriately be used as a control measure;
- recognize proper qualitative and quantitative fit test procedures, and perform adequate maintenance on respirators;
- evaluate an employer's respirator program for compliance with the Federal standards;
- describe the testing and certification procedures in 30 CFR Part 11.

Course Highlights Include:

- limitations of respirator use;
- review of Federal standards which control the use of respirators.

Course Sequence in the Compliance Training Program:

This is the fifth course in the second phase of the training program for Industrial Hygienists.

100-62 Basic Science as Applied to Occupational Safety and Health

(1 week, optional)

Course provides the nonscience major with basic and/or remedial mathematics and science, emphasizing content basic to CSHO's work.

A basic mathematics review will include metric conversions, ratios, decimals, percentages, linear equations and the basic trigonometric functions. The student will be introduced to selected topics in chemistry and physics, including a review of the characteristics of the elements, chemical equations, fire chemistry, force systems, moments of inertia, mechanics of noise, illumination, ventilation and electricity. Examples of applications to actual safety problems include calculating sling tension, crane tipping moments, solving basic ventilation problems, and calculating heights, depths, and angles of repose.

Objectives:

The trainee will be able to:

- solve mathematical and scientific problems encountered in performing the duties of a compliance officer.

Course Highlights Include:

- a review of basic mathematics, chemistry, and physics with specific applications to solving actual safety problems.

Course Sequence in the Compliance Training Program:

This is the first optional course in the first phase of the training plan for Safety Engineers/Specialists.

100-63 Initial Compliance Course for Safety Officers

(2 weeks)

Course provides the trainee with a basic understanding of P.L. 91-596, 29 CFR 1903 and 1904, OSHA management organization, administrative policies and directives systems. The Field Operations Manual (FOM) is discussed as it relates to inspection programming, opening conference, inspection, closing conference, completing the applicable inspection forms, employee complaints, violations, penalty system, State plans, and Federal agency programs.

The trainee is introduced to the Code of Federal Regulations system and a method of color coding the standards and regulations. Only portions of the OSHA standards are reviewed including subparts D, E, F, I, J, K, L, and P.

Trainees are also presented with an orientation in communications and human relations. This session precedes 100-70 which is the advanced course on the same subject. The basic course focuses on an overview of communications and human relations, and on teaching basic skills necessary to handle interactions with associates.

Objectives:

The trainee will be able to:

- conduct inspections in accordance with operational procedures, policies and directives;
- complete all necessary inspection forms, assess the severity of hazards discussed in this course and calculate penalties accordingly;
- select and apply regulations 29 CFR 1903, 1904 and 1910 (subparts D,E,F,I,J,K,L,P);
- apply basic knowledge of communications and human relations to the actual work environment.

Course Highlights Include:

- Field Operations Manual orientation;
- introduction to the CFR system;
- survey of 29 CFR 1910, subparts D, E, F, I, J, K, L and P;
- communications and human relations overview.

Course Sequence in the Compliance Training Program:

This is the first course in the first phase of the training plan for Safety Engineers/ Specialists.

100-66

Introduction to OSHA Safety Standards & Hazard Recognition

(14 days)

Course gives the trainee a basic understanding of industrial processes and related hazards, and the applicable OSHA standards relating to them. Also included in the course is a review of standards subparts G, H, M, N, O, Q, R, S, Z and also the construction and maritime regulations.

Trainees are also exposed to the practical application of the inspection process including the use of direct-reading instruments; a review of the accident investigation procedures including problem solving techniques; and how to interview witnesses and take statements.

Objectives:

The trainee will be able to:

- select and use regulations: 29 CFR 1910 (subparts G, H, M, N, O, Q, R, S, Z); maritime; and construction;
- use direct-reading instruments to evaluate common health hazards;
- identify hazards of some industrial processes;
- recognize good accident investigation techniques;
- contribute to the preparation, conduct and report writing of O J T. Inspections and accident investigations;

Course Highlights Include:

- explanation and review regulations of 29 CFR 1910 (subparts G, H, M, N O, Q, R, S, Z) maritime and construction;
- use of direct-reading instruments.

Course Sequence in the Compliance Training Program:

This is the second course in the first phase of the training plan for Safety Engineers/Specialists.

100-70 Communications and Human Relations for CSHO's

(1 week)

Course acquaints trainee with basic communications theories and principles; personal communication; techniques of narrative and descriptive writing; and psychological concepts in human relations. (This is an extension of Course 100-63.)

Objectives:

The trainee will be able to:

- identify different modes of human behavior;
- effectively use individual skills in communicating with others;
- prepare different types of reports using proper techniques of narrative and descriptive writing.

Course Highlights Include:

- theory and principles of communications techniques including behavior theory, verbal and nonverbal communications, expectations and interaction systems;
- practical application of communications skills to compliance activities;
- role playing, observation and interpretation in workshop experiences.

Course Sequence in the Compliance Training Program:

This is the third course in the first phase of the training plan for Safety Engineers/Specialists.

100-71 Civil Law Enforcement for CSHO's

(1 week)

Course familiarizes trainee with the formal requirements and processes of the legal system, covering proceedings, hearings, submission of evidence, pre-trial preparation, testifying, Federal laws, OSHA regulations, and contest procedures. Actual cases are studied, with emphasis on technicalities resulting in case dismissals.

Objectives:

The trainee will be able to:
- prepare case files which are legally sufficient and defensible;
- represent OSHA in contested court actions.

Course Highlights Include:

- review of the Occupational Safety and Health Act as it pertains to subpoena power and judicial review;
- various aspects of the trial process, from preparation to testifying in court.

Course Sequence in the Compliance Training Program:

This is the fifth course in the first phase of the training plan for Safety Engineers/ Specialists.

100-72 Accident Investigation

(1 week)

Course presentations include techniques of information collection, accident reconstruction; interview techniques and witness statements; techniques of photography; accident cause analysis; violations, citations, and legal procedures; problem simulation; and immediate and delayed accident investigation. (This is an extension of Course 100-66.)

Objectives:

The trainee will be able to:

- determine what information is pertinent to establishing the cause of an accident;
- analyze accident data, and to recommend subsequent action;
- prepare accurate reports for documenting events surrounding an accident.

Course Highlights Include:

- preparation for accident investigation;
- procedures for delayed and immediate investigations;
- post-investigative activities.

Course Sequence in the Compliance Training Program:

This is the fourth course in the first phase of the training plan for Safety Engineers/Specialists.

100-85 Introduction to Industrial Hygiene for Safety Officers

(2 weeks)

Course familiarizes trainee with general concepts and philosophy of industrial hygiene so trainee can recognize common health hazards and determine need for compliance action. Covers Industrial Hygiene Field Operations Manual and evaluation of selected hazards by use of instruments.

Objectives:

The trainee will be able to:

- recognize common health hazards resulting from inadequate maintenance, improper training or unsafe working conditions;
- evaluate the extent and seriousness of a health hazard using industrial hygiene sampling instruments.

Course Highlights Include:

- basic industrial hygiene philosophy in recognizing, evaluating and controlling health hazards;
- "hands-on" introduction to many of the instruments used in compliance work.

Course Sequence in the Compliance Training Program:

This is the sixth course in the second phase of the training plan for Safety Engineers/Specialists.

100-112 Special Topics in Industrial Hygiene

(1 week)

Course in health related topics includes ergonomics, illumination of the workplace and evaluation of lighting, physiology of body temperature regulation, heat stress measurement, cryogenics, vibration, biological factors affecting workers' health, and pneumoconiosis.

Objectives:

The trainee will be able to:

- describe the mechanics of lifting and material handling, and the causes and effects of low back pain and muscle strain;
- conduct a lighting survey;
- describe the effects of biological stresses such as heat, cold, and vibration;
- describe the major, minor and benign pneumoconioses.

Course Highlights Include:

- relationship of human anatomy and physiology to various work environment stresses;
- health effects of environmental stresses at the worksite.

Course Sequence in the Compliance Training Program:

This is the first course in the third phase of the training plan for Industrial Hygienists.

100-116 Hazardous Materials Course for Industrial Hygienists

(1 week)

Teaching focuses on the recognition, evaluation, and control of flammables, combustibles, and explosives. Topics include flammable ranges, storage of flammables, spray and dip coating, compressed gases, explosive and blasting agents, LP gas, anhydrous ammonia, and sanitation.

Objectives:

The trainee will be able to:

- recognize, evaluate and control hazards of flammables, combustibles, and explosives;
- apply regulatory provisions for storage and use of flammables, combustibles, and explosives for determining compliance with occupational safety and health standards;
- recognize fire hazards associated with paint spray, dip coating processes, and open surface tanks.

Course Highlights Include:

- concise review of the chemical and physical properties of selected substances which can create potential fire and explosion hazards;
- control of flammable, corrosive, and explosive materials through proper transfer, handling, and storage procedures.

Course Sequence in the Compliance Training Program:

This is the second course in the third phase of the training plan for Industrial Hygienists.

100-118 Accident Investigation Course for Industrial Hygienists

(1 week)

Course provides training in accident investigation and documentation, including techniques of information collecting, interview techniques and witness statements, techniques of photography, accident reconstruction, cause analysis, violations, citations, legal procedures, immediate and delayed accident investigations, and problem simulation. Health-related workshops are presented.

Objectives:

The trainee will be able to:

- conduct an accident investigation according to the Field Operations Manual;
- properly gather and document facts through such investigation techniques as interviews, photographs, and collection of records and sampling data;
- analyze possible accident causes to prevent their recurrence;
- prepare a case file and recommend action for a citation and abatement of specific hazards.

Course Highlights Include:

- investigation techniques and methods;
- case files and workshops presented to trainees for analysis.

Course Sequence in the Compliance Training Program:

This is the third course in the third phase of the training plan for Industrial Hygienists.

100-121 Recognition, Evaluation, and Control of Ionizing Radiation

(1 week)

Course teaches fundamental principles of ionizing radiation, industrial sources, screening devices, interpretation of the standards, agency jurisdiction, and feasible controls.

Objectives:

The trainee will be able to:

- recognize industrial sources of ionizing radiation and determine applicable controls;
- conduct a radiation survey to determine worker exposure to ionizing radiation;
- recognize under what conditions a radiation source is regulated by the Nuclear Regulatory Commission;
- correctly interpret and apply federal Federal standards in workplaces in which radiation sources are handled or used.

Course Highlights Include:

- recognition of sources of radiation hazards and equipment at the worksite;
- survey techniques for assessing overexposure to radiation.

Course Sequence in the Compliance Training Program:

This is the fourth course in the third phase of the training plan for Industrial Hygienists.

100-122 Recognition, Evaluation, and Control of Nonionizing Radiation

(1 week)

The types, industrial usage, evaluation and control of nonionizing radiation are taught. Lectures cover the electromagnetic spectrum, microwaves, radiowaves, and lasers, and are supplemented by demonstrations/laboratory sessions on screening devices and methods of control.

Objectives:

The trainee will be able to:

- recognize industrial sources of nonionizing radiation and methods of control;
- identify health hazards caused by nonionizing radiation;
- conduct an inspection of a worksite to determine worker exposure to nonionizing radiation.

Course Highlights Include:

- recognition of hazard sources of nonionizing radiation;
- use of survey instruments.

Course Sequence in the Compliance Training Program:

This is the fifth course in the third phase of the training plan for Industrial Hygienists.

300-1 Competent Person Course

(3 days)

This course is designed to develop the individual's ability to meet the criteria for a "Competent Person" as identified in 29 CFR 1915.10(b), 29 CFR 1916.10(b), and 29 CFR 1917.10(b).
(To be conducted in the field upon request.)

Objectives:

The trainee will be able to:

- carry out instructions issued by the National Fire Protection Association Certified Marine Chemist;
- use and interpret the readings of an oxygen indicator, a combustible gas indicator and a CO and CO_2 indicators ;
- perform tests and inspections required by OSHA regulations and to maintain the required logs;
- recognize and evaluate workplace safety and health hazards and ensure correction before work begins.

Course Highlights Include:

- "hands-on" training with the oxygen indicator, the combustible gas indicator and CO and CO_2 indicators ;
- "hazardous spaces" entry procedure;
- ventilation techniques;
- personal protective equipment;
- ship repairing, shipbuilding and shipbreaking operations;
- gas-freeing methods;
- chemistry of fire, toxic and O_2 deficient atmospheres;
- coverage of subparts B, C, D, H, I of OSHA maritime regulations.

400-2

Instructor Course in Occupational Safety and Health Standards for the Construction Industry (for the Private Sector)

(5 days)

This course teaches individuals in the construction industry and allied fields methods for developing voluntary compliance programs for presentation to supervisors and operating employees.

Objectives:

The trainee will be able to:

- develop and implement an effective safety and health training program in accordance with OSHA construction regulations and guidelines;
- effectively apply the OSHA workplace and work practice standards applicable to construction work.

Course Highlights Include:

- review of Federal laws and regulations peculiarly applicable to construction work;
- review of all major types of construction operations and conditions and of the standards applicable to them;
- review of the hazard recognition instructor's guide and slides available for purchase and presentation of construction safety and health programs through the National Audio Visual Center, Washington, DC, and OSHA requirements for teaching these materials.

500-2 A Guide to Voluntary Compliance for Instructors (for the Private Sector)

(5 days)

This course teaches personnel from all types of industries to develop and present information for implementing the provisions of the OSHAct in their workplaces. Focus is on: 1) basics of the Act, 2) introduction to occupational safety and health standards, and 3) the development and implementation of an effective safety and health training program.

Objectives:

The trainee will be able to:

- develop and implement an effective safety and health training program in accordance with OSHA general industry regulations and guidelines;
- present occupational safety and health training programs at his/her workplace;
- refer to OSHA regulations and other adopted standards to determine compliance with the OSHAct.

Course Highlights Include:

- workshops in using OSHA regulations, 29 CFR 1910 (General Industry); National Electrical Code and other adopted standards.
- review of compliance procedures, regulations, workplace and work practice standards;
- familiarization with OSHA occupational safety and health program, "A Guide to Voluntary Compliance," available from the National Audio Visual Center, Washington, DC , and OSHA requirements for teaching these materials.

600-2 Collateral Duty Course (for Other Federal Agencies)

(1 week)

This course is an overview of OSHAct and its regulations as they affect other Federal agencies. It introduces part-time safety personnel to hazard recognition and control, covering: fire protection systems; walking and working surfaces; materials handling and storage; electrical equipment and wiring; portable power tools; vehicle safety; fire exits; machine guarding. Program management studies include: accident prevention concepts; safety and health program organization and evaluation; occupational injuries and illnesses; and recordkeeping and reporting. Attention is given to actual or simulated workplace inspections to increase hazard awareness.
(Other courses will be conducted in the field upon request from Federal agencies.)

Objectives:

The trainee will be able to:

- identify some of the safety and health hazards associated with a variety of industrial machinery, equipment, and materials;
- identify potential hazards and how to obtain information or expertise in controlling those hazards.

Course Highlights Include:

- a walkthrough inspection and evaluation of a nearby government facility.

600-4 Occupational Safety and Health Course for Other Federal Agencies

(2 weeks)

Full-time safety officers or safety supervisors, assigned responsibilities under Executive Order 11807 and Title 29 CFR 1960, are taught OSHA regulations and standards in depth, to improve their hazard recognition skills. General safety and health program management training covers: an overview of OSHAct; Federal agency inspection program for the private sector (contractor); Federal agency responsibility with respect to OSHA; safety program organization, implementation and evaluation; accident investigation; communication; and workplace inspection techniques. Attendees are given in-depth instruction in the more pertinent technical parts of the OSHA safety standards including Part 1926, construction regulations. One and one-half days of the course are devoted to health concepts and health standards with more in-depth instruction made available to interested individuals. The structure of the standards is covered along with a session on coding so that standards may be used with greater ease. Actual or simulated workplace inspections allow application of this new knowledge thereby increasing hazard awareness. Attendance at this course also prepares attendees to train collateral duty personnel.

Objectives:

The trainee will be able to:

- apply increased knowledge of the OSHAct in strengthening the effectiveness of his/her agency's OSH program;
- evaluate his/her OSH program organization;
- determine if the agency's OSH needs are being fulfilled;
- train collateral duty safety and health personnel.

Course Highlights Include:

- workshops to increase hazard recognition skills;
- opportunities to discuss problems and ideas with safety officers from other government agencies;
- a walkthrough inspection and evaluation of a nearby government facility.

Tentative Safety Courses*

Agriculture *(1 week)*

Course reviews the requirements for 29 CFR 1928.21.

Commercial Diving Compliance Inspections *(3 weeks)*

Course is intended to give the trainee comprehensive preparation for on-site compliance inspections under the Commercial Diving Standard.

Introduction to Commercial Diving *(4 weeks)*

Course is intended to introduce the compliance safety and health officer to diving principles and practice.

Occupational Health and Environmental Control *(1 week)*

Course covers Subpart G, 1910.94 to 1910.97. Ventilation (1910.94) segment covers control of airborne hazards from dip tank and spray operations, grinding, polishing, blasting, etc. Occupational noise exposure and ionizing and nonionizing radiation are studied along with design factors and requirements of related standards.

Power Transmission and Distribution *(1 week)*

Studies cover 29 CFR 1926.950 to 1926.960—Subpart V.

Radiation *(1 week)*

Study is given to 1910.96 (ionizing radiation) and 1910.97 (nonionizing radiation).

Respirators *(1 week)*

Respirator types, use, maintenance, and operations are covered (1910.134).

Special Industries *(1 week)*

Covers portions of Subpart R: paper mills, textiles, sawmills, and logging (1910.261 to 1910.266).

(continued)

*Courses are being developed.

Tentative Safety Courses-continued

Trenching and Excavation and Soil Mechanics *(1 week)*

Coverage is given to 1926.661 and 1926.662.

Tunneling *(1 week)*

Subpart S of 1926.800—tunnels, shafts, etc.—is studied.

Area Inspections

This is a series of numbered field training segments, varying in length from 8 to 11 weeks, for the Industrial Hygienist. The series includes:

Second phase training: 100-51 ***(9 wks)***; **100-113** ***(11 wks)***; **100-54** ***(8 wks)***; **100-45** ***(8 wks)***; **100- 49** ***(8 wks)***; **100-58** ***(8 wks)***
Third phase training: 100-110 ***(11 wks)***; **100-117** ***(11 wks)***; **100-119** ***(11 wks)***

Area inspections implement the industry familiarization plan for each employee. While these segments are coded to denote supervised site visits, not all such visits require that a Senior Industrial Hygienist accompany the employee.

On-Job Training
(Industrial Hygiene)

First Phase

100-26 First On-Job Training *(6 weeks)*

Structured work assignments and initial experiences prepare an Industrial Hygienist for formal classroom training. Segment covers: observation of a general schedule walkthrough survey, including technical preparation, calibration of instruments, opening conference, walkthrough, air and noise sampling, closing conference, sampling submissions, and preparation of citation; observation of one complete follow-up inspection; and familiarization with administrative procedures. Directed by the Supervisory Industrial Hygienist (trainer).

100-30 Second On-Job Training *(14 weeks)*

Objectives are: applications of hazard recognition techniques learned in classroom; increased proficiency in using the sound level meter, noise dosimeter, and air sampling pump; knowledge of specific industrial processes; and ability to conduct a complete opening conference. Assignments include: reviewing the office library's basic industrial hygiene reference materials; observing an opening conference; observing industrial operations to determine potential health hazards; becoming acquainted with instruments maintained at the Area Office; calibrating instruments; assisting the Supervisory Industrial Hygienist in completing OSHA forms after a workplace inspection; under supervision, assisting in taking personal samples; observing a number of inspections of selected industries; and preparing a technical report on a specific industry. This report should indicate raw materials used; the flow of work processes; potential health hazards; levels of noise, dust, etc; controls in use; and standards violated. Directed by the Supervisory Industrial Hygienist (trainer).

100-36 Third On-Job Training *(14 weeks)*

During this segment, which completes the formal field development stage of the new hire, trainees will: review case files to determine equipment necessary to evaluate implementation of controls; prepare all instruments for the follow-up inspection; conduct an opening conference; set up all equipment for determining compliance; during an inspection, answer routine questions concerning scope of survey, reasons for taking samples, and general methods of controlling common hazards; conduct at least two complete closing conferences; participate as a team member in inspection activities including large-scale general schedule and special emphasis program; attend an informal employer-Area Director conference; perform a literature search to resolve a problem in health hazard identification and control; observe an experienced Senior Industrial Hygienist discussing penalties with the Area Director; participate in at least three inspections, conducted by a Safety Compliance Officer, that include preparation, opening conference, walkthrough, closing conference, and citation writing. Directed by the Supervisory Industrial Hygienist (trainer).

100-38 Fourth On-Job Training *(6 weeks, approx.)*

Site visits under the guidance of a Senior Safety Specialist emphasize recognition of safety hazards and preparation of citations. Directed by the Supervisory Industrial Hygienist (trainer) in conjunction with the Supervisory Safety Officer.

On-Job Training
(Safety)

First Phase

100-64 First On-Job Training *(10 weeks)*

Assignments at Area Office apply principles and theories to actual worksite problems. Five weeks of work relate to subjects covered in Course 100-62 and five weeks to the contents of Course 100-63. Trainee accompanies trainer on inspection, observes file preparation and citation processing and attends informal conferences.

100-68 Second On-Job Training *(9 weeks)*

Assignments at Area Office apply principles and theories presented in Course 100-66 to actual worksite problems. Eight weeks are devoted to observing, studying, and (if approved by trainer) performing inspection preparation, field work, and post-inspection. For one week, trainee accompanies an experienced industrial hygienist (IH) on inspections and learns how to use IH's instruments.

100-73 Third On-Job Training *(11 weeks)*

Assignments at Area Office apply principles and theories to actual worksite problems and present daily opportunites for use of communications skills learned in Course 100-70. Five weeks of work relate to subjects covered in Course 100-72 and six weeks to the contents of Course 100-71. Under supervision, trainee may conduct inspections, prepare case files, and use selected instruments.

Second Phase

100-75 First On-Job Training *(6 weeks)*

Assignments at Area Office apply principles and theories presented in Course 100-3 to actual worksite problems. Covers all types of construction, providing trainee with supervision to gradually assume responsibility for making inspections.

100-77 Second On-Job Training *(6 weeks)*

Assignments at Area Office apply principles and theories presented in Course 100-18 to actual worksite problems. Covers all types of machinery and machine guarding, providing trainee with supervision to gradually assume responsibility for making inspections.

100-79 Third On-Job Training *(6 weeks)*

Assignments at Area Office apply principles and theories presented in Course 100-17 to actual worksite problems. Covers all types of inspection and investigation processes and provides trainee with supervision to gradually assume responsibility for making inspections.

100-81 Fourth On-Job Training *(6 weeks)*

Assignments at Area Office apply principles and theories presented in Course 100-10 to actual worksite problems. Includes visits to several industries. Provides trainee with supervision to gradually assume responsibility for making inspections.

100-83 Fifth On-Job Training *(5 weeks)*

Assignments at Area Office apply principles and theories presented in Course 100-19 to actual worksite problems. Includes visits to several industries. Provides trainee with supervision to gradually assume responsibility for making inspections.

100-86 Sixth On-Job Training *(5 weeks)*

Assignments at Area Office apply principles and theories presented in Course 100-85 to actual worksite problems. Covers visits to several industries, including planned site visits accompanying an experienced industrial hygienist.

Seminars
(Industrial Hygiene)

100-48 Regional Policy Seminar—First Phase *(2-3 days)*

This seminar on administrative procedures, regional issues and policies, and organization and management issues specific to each Region is conducted in the regions by regional personnel.

100-52 Regional Seminar—Second Phase *(1 week)*

Course has two major components. First, regional training in selected processes and industry characteristics pertinent to each Region sets the stage for compliance programming and site visits for that Region, influencing area inspection segments for the year. Second is a review of OSHA update material developed and/or implemented by the National Office during the preceding calendar year; this encompasses program directives, field information memoranda, standards, proposed standards, and legal decisions.

100-111 Regional Seminar—Third Phase *(1 week)*

The subjects in this seminar are the same as those for 100-52.

100-114 Health Hazard Recognition Seminar *(1 week)*

Selected student-prepared industrial situations are incorporated in this course. Instruction is on a variety of industries and industrial processes such as foundries, smelting, electroplating, battery manufacture, textile production, organic and inorganic chemical manufacturing, and petro-chemical manufacturing.

Seminars
(Safety)

100-67 Career Development Seminar *(1 day)*

Session at the Institute or at the Regional or Area Office acquaints trainee with CSHO career opportunities and career counseling. Covers: OSHA policy, goals, and objectives; academic and professional training opportunities; and professional development.

Self-Instruction Courses
(Industrial Hygiene)

100-25 Orientation *(1 week)*

This package provides background information to make preliminary site visits and initial Institute training more effective. It includes the programmed instruction course, "Principles and Practices of Occupational Safety and Health," and covers basics of the OSHAct, recordkeeping, and an introduction to OSHA's health program. Directed by the Supervisory Industrial Hygienist (trainer).

100-43 Technical Report Writing *(1 week, approx.)*

This course is taken either with self-instructional materials or at a local college (or other training source) as assigned by the area director.

100-44 Safety Hazard Abatement *(1 week)*

Selected readings in safety hazard recognition, related standards, and abatement approaches are done at the duty station under direction of the Supervisory Industrial Hygienist (trainer).

100-46 Communications, Human Relations, and Civil Law Enforcement *(1 week, approx.)*

Material prepares the trainee for the Communications and Human Relations and the Civil Law Enforcement courses.

100-56 Noise Course *(1 week, approx.)*

Prepares trainee for Recognition, Evaluation, and Control of Noise course. Reviews the physics of noise, application of theory, and contested cases involving feasibility of controls. Performed at the employee's duty station, under direction of the Supervisory Industrial Hygienist (trainer).

100-59 Industrial Ventilation *(1 week, approx.)*

Prepares trainee for the Industrial Ventilation course. Material reviews the physics of air, application of theory, and review of contested cases involving the feasibility of ventilation as a means of controlling environmental health hazards. Performed at employee's duty station, under direction of Supervisory Industrial Hygienist (trainer).

100-120 Radiation Hazards *(1 week, approx.)*

Prepares the trainee for courses on recognition, evaluation, and control of ionizing and nonionizing radiation. Instruction covers a health physics review, application of theory, and review of contested cases involving radiation standards citations. Performed at the employee's duty station under the direction of the Supervisory Industrial Hygienist (trainer).

Self-Instruction Courses
(Safety)

100-60 Orientation *(3 weeks)*

Program at Area Office gives new hire basic introduction to the OSHAct, the standards, FOM, and general administrative and office procedures, with emphasis on the inspection process.

100-61 *(1 week)*

At Area Office, trainee has 2 days of selected readings from the course, "Principles and Practices of Occupational Safety and Health," and 3 days of problem-solving exercises in basic mathematics and science, as preparation for courses 100-62 and 100-63.

100-65 *(1 week)*

At Area Office, the trainee prepares for Course 100-66 by studying subparts, G, H, M, N, O, Q, S and Z of 1910, 1926, general coverage of 1915, 1916, 1917, and (particular emphasis) 1918, and reviewing inspection and accident investigation case files.

100-69 *(1 week)*

At Area Office, trainee prepares for courses 100-70 and 100-71 by studying files on investigation cases and contested cases. Results of contested cases are reviewed.

100-74 *(2 days)*

At Area Office, trainee prepares for Course 100-3 by studying 29 CFR 1926, subparts C, F, G, H, P, Q, R, S, T, U, V, and W.

100-76 *(2 days)*

At Area Office, the trainee prepares for Course 100-18. Studies include Subpart O of 1910.

100-78 *(2 days)*

At Area Office, trainee prepares for Course 100-17. Studies include Subpart S of 1910.

100-80 *(2 days)*

At Area Office, trainee prepares for Course 100-10. Studies include subparts H, L, M, and Q of 1910.

100-82 *(2 days)*

At Area Office, trainee prepares for Course 100-19. Studies include subparts F and N of 1910.

100-84 *(2 days)*

At Area Office, trainee prepares for Course 100-85.

Meet the Staff

H. Lee Saltsgaver,
Manager, OSHA Training Institute

Mr. Saltsgaver graduated from the University of Illinois with a B.S. degree in social studies/business administration. While in the U.S. Air Force, he was an instructor pilot. He also taught flight instruction at the University of Illinois in the Institute of Aeronautics. He has worked as a construction engineer in the electric utility field, as a safety director for a construction contracting firm, and as a safety consultant for a nationally known management consulting organization. As a consultant, he conducted compliance inspections, made loss prevention surveys, and assisted in hazard abatement programs over an extended period of time. He has written safety articles, and has been an editor of several nationally known safety and health publications. He has also researched, developed, and produced training programs and audio-visual training materials for the private sector. Since joining the OSHA Institute staff in December 1971, he has served as an instructor and Program Area Leader for construction and electrical courses.

Howard J. Goldman,
Training Instructor, Occupational Safety and Industrial Hygiene Instrumentation

Dr. Goldman earned an M.S. degree in physics from DePaul University, and a Ph.D. in electrical engineering from Illinois Institute of Technology. Dr. Goldman's research and consulting experience (18 years) includes instrumentation analysis and design related to industrial safety and hygiene, and military and space surveillance. His teaching experience (13 years) includes electrical and noise courses, radiation theory, physics, statistics, and mathematics. He has also invented instruments for electrical receptacle testing, microwave group velocity control, and beta-ray backscatter detection of thin layers. Dr. Goldman has written numerous papers in the field of instrument sensing and control. He is a member of the Institute of Electrical and Electronic Engineers, and Sigma Xi.

Henry H. Hale,
Program Area Leader, Special Programs

Mr. Hale earned a B.S. degree in business administration from the West Virginia State College at Institute, West Virginia, and completed advanced work in business administration at West Virginia University. His background includes eight years of professional safety experience with the U.S. Postal Service, and teaching experience at Richard J. Daley College in Chicago.

Quentin B. Hasse,
Chairman, OSHA Training Institute Construction Curriculum

While a student at Case-Western Reserve University, Mr. Hasse earned a B.B.A. degree in economics and marketing, an L.L.B. degree, and completed post-graduate work in labor laws and patents. He is currently a member of the Ohio Bar. His background includes extensive experience in industrial relations (including safety and health), and consulting in personnel and management development, training and education, operations research, and safety and health. As principal consultant, he developed and wrote OSHA-related employer and employee safety and health training programs. While working as an attorney, he investigated and prepared workers compensation and public liability personal injury and accident cases.

Arthur G. Hawes,
Chairman, Electrical Safety Curriculum

Mr. Hawes earned a B.S. degree in computer science, an M.B.A. from California Christian University, and is near completion of a doctorate in business management. Prior to joining the OSHA Training Institute in January 1976, Mr. Hawes held positions in the private sector as president of his own firm, vice president of California Micro Circuits, Inc., and national manager for Babcock & Wilcox.

H. Richard Hawks,
Certified Safety Professional, Instructional Support Group Leader (Acting). Course Chairman of the Hazardous Materials and Compressed Gases Course

Mr. Hawks earned a B.S. degree in science and mathematics from Bradley University, and completed advanced work in law at De Paul University. His background includes professional safety experience in consulting, research, and insurance industrial loss control. Mr. Hawks has worked in aircraft manufacturing, household appliance manufacturing, food processing, agriculture, warehousing, and communications. Among other duties as a Safety and Loss Control Consultant, he performed inspections in such industries as construction, foundries, automotive equipment, agricultural equipment, heavy machine manufacturing, trucking, and a broad spectrum of light and heavy industry. He is presently a member of the American Society of Safety Engineers and a member of the local chapter of the American Industrial Hygiene Association.

Carlton H. Heise,
Certified Safety Professional, Program Area Leader of Advanced Courses

Mr. Heise has been engaged in safety and loss control activities as a safety director, and corporate manager of safety and health services. His background includes experience in rolling mill, heavy machinery, and foundry industries. Prior to assuming his training responsibilities at the Institute, he spent three years in the field as a CSHO. He presently teaches both basic and advanced courses in addition to his other duties as Program Area Leader.

Edgar L. Mendenhall,
Certified Safety Professional,
Program Area Leader, Basic CSHO (Safety Curriculum)

Mr. Mendenhall earned a B.S. degree in general engineering from Iowa State University, has completed advanced work in industrial engineering, and served as an instructor on the Iowa State University staff. He has professional experience in the government aerospace industry, and as a technical writer/editor for various safety and health publications. He was one of the supervisors on the task force which developed the initial construction safety and health standards. He has been Director, Office of Compliance, OSHA, and has been a member of the Training Institute staff since August 1973.

Alfred Owyang,
Training Instructor, Ionizing and Nonionizing Radiation

Mr. Owyang earned a B.A. degree from Macalester College, and completed graduate study in physics at Carnegie-Mellon University. He has held supervisory and technical administrator positions in the areas of explosives, propellents, biological and radiological warfare, and nuclear radiation effects. He has published several technical reports. Prior to joining the OSHA Training Institute staff, Mr. Owyang was an occupational health compliance officer for the State of Hawaii. He is a member of American Physical Society's Division of Fluid Dynamics.

Al Paliliunas,
Training Instructor, Industrial Hygiene Curriculum

Mr. Paliliunas earned a B.S. degree in bio-engineering from the University of Illinois. He has professional industrial hygiene experience in both State and Federal governments.

Don Parker,
Industrial Hygienist

Mr. Parker earned a B.S. degree in occupational education and an M.A. degree from Central Michigan University. He has had 20 years of experience in industrial hygiene, occupational medicine, and environmental health with the U.S. Air Force. Mr. Parker is a member of the American Industrial Hygiene Association, American Conference of Governmental Industrial Hygienists, American Society of Safety Engineers, and the National Environmental Health Association.

Frank G. Perrino,
Industrial Hygienist

Mr. Perrino earned a B.S. degree from Illinois State University in biology, chemistry, and advanced studies in biochemistry (health physiology). Prior to joining the Institute staff, he worked as a junior research chemist for the Cement Association, and as an engineer technician for the Illinois Department of Transportation.

Zigmas S. Sadauskas,
Program Area Leader, Industrial Hygiene Section

Mr. Sadauskas earned a B.S. degree in chemical engineering at the Midwest College of Engineering, a B.S. degree in industrial psychology from the University of Illinois, and an M.B.A. from Roosevelt University. As an industrial hygienist for the Department of Labor, State of Illinois, he performed compliance inspections, and became supervisor in charge of training and developing industrial hygienists. He joined the Institute staff in 1975, and is currently responsible for managing the Basic Entry Level Program for Industrial Hygienists. He is a member of the ACGIH and the AIHA.

Anthony J. Towey,
Program Area Leader, Advanced Industrial Hygiene

Mr. Towey earned both a B.A. degree in biology and an M.S. degree in biochemistry from St. Mary's College, Minnesota. He completed advanced work at Wayne State University, Michigan State University, University of Minnesota, and the University of Illinois. He has taught high school biology and chemistry, performed field compliance work in industrial hygiene with the Illinois Department of Labor, and was a member of the task force which developed the Three-Phase Basic Entry Level Program for Industrial Hygienists. Mr. Towey is a member of the American Industrial Hygiene Association, and is currently on the Board of Directors for the local section of the AIHA.

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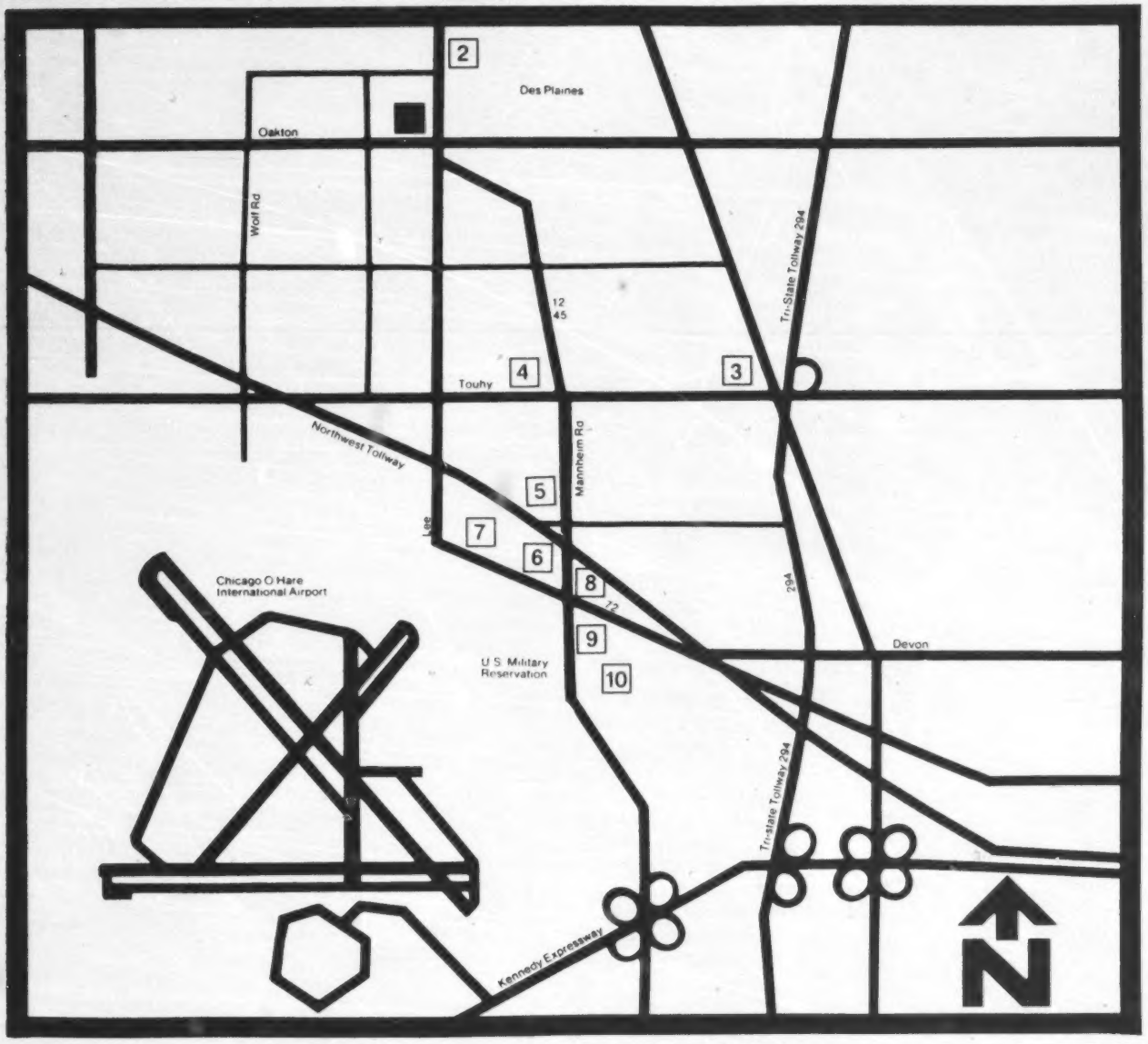

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4. Holiday Inn, Mannheim & Touhy
5. Sheraton O'Hare, 6810 N. Mannheim Road
6. Ramada O'Hare, Mannheim & Higgins
7. 4 - Horseman Motel, 10300 W. Higgins Road
8. Travel Lodge, 3003 N. Mannheim
9. Windsor Inn, 6565 Mannheim Road
10. Grand Plaza Hotel, 6465 Mannheim Road